



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,472	12/30/2003	Michael L. Combs	BUR920000163US2	7077
30449	7590	07/02/2004	EXAMINER	
SCHMEISER, OLSEN + WATTS			TSAI, CAROL S W	
SUITE 201			ART UNIT	
3 LEAR JET			PAPER NUMBER	
LATHAM, NY 12033			2857	

DATE MAILED: 07/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Applicati n N .	Applicant(s)	
	10/748,472	COMBS ET AL.	
	Examiner	Art Unit	
	Carol S Tsai	2857	

-- The MAILING DATE f this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 20-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 20-28 is/are rejected.
- 7) ☒ Claim(s) 8-11 and 20-26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/30/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-11 and 20-28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 1, line 3, it is not understandable what is meant by "a control I/O", since there is no clear and specific indications discloses in the Specification.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-11 and 20-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Regarding claim 1, the phrase "may be" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-4, 7, 27, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent No. 6,397,361 to Saitoh.

With respect to claims 1-4, Saitoh discloses a method of testing a semiconductor chip having a plurality of common I/Os associated therewith whose characteristics or properties can be tested by applying a test signal through a control I/O, the method comprising the steps of: connectivity testing a chip-to-package connection of at least one of the common I/O (see col. 3, lines 37-54 and col. 11, line 51 to col. 13, line 17); and determining whether the chip-to-package connection is faulty from a result of the connectivity testing (see col. 8, line 62 to col. 10, line 25 and col. 13, lines 17-21).

As to claim 7, Saitoh also discloses the driver being configured as a weak driver that is sensitive to capacitative loading (see col. 10, lines 14-25).

As to claims 27 and 28, Saitoh also disclose providing semiconductor circuitry between the driver and the control I/O (switch latch circuit 203 and 204 and receiver 1202 shown on Fig. 13).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saitoh in view of U. S. Patent No. 6,262,580 to Wu.

As noted above, with respect to claims 5 and 6, Saitoh discloses the claimed invention, except for determining whether the chip-to- package connection is faulty comprises: comparing a first RC constant associated with a first signal relating to a connectivity testing of a first I/O with a second RC constant associated with a second signal relating to a connectivity testing of a second I/O.

Wu teaches determining whether the chip-to- package connection is faulty comprises: comparing a first RC constant associated with a first signal relating to a connectivity testing of a first I/O with a second RC constant associated with a second signal relating to a connectivity testing of a second I/O (see col. 2, lines 9-24 and col. 3, line 26 to col. 4, line 65).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Saitoh's method to include determining whether the chip-to- package connection is faulty comprises: comparing a first RC constant associated with a first signal relating to a connectivity testing of a first I/O with a second RC constant associated with a second signal relating to a connectivity testing of a second I/O, as taught by Wu, in order to test whether the integrated circuit can function properly.

Allowable Subject Matter

10. Claims 8-11 and 20-26 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Grupp et al. disclose a system and method to accurately model bidirectional wire I/O using hardware description language (HDL).

Haycock et al. disclose a simultaneous bi-directional I/O circuit including a first MUX in the reference select circuitry and a second, matching MUX in the pre-driver stage of the output buffer.

Brehm discloses a system for testing semiconductor devices on device test boards having a single tester channel connected to multiple DUTs in a loop.

Martin discloses methods and circuits for testing open collector or open drain output pads.

Yamamura discloses a semiconductor integrated circuit including a chip, a core area on the chip in which tester circuits are placed, and an I/O area on the chip.

Heo et al. disclose a test system for detecting integrated circuit (IC) devices having a short life time.

Lin et al. disclose an input/output (I/O) device with programmable I/O characteristics

Art Unit: 2857

being provided for use on an integrated circuit to serve as a communication interface whose input/output characteristics can be set through programmable means to be matched to the external circuitry to which the IC chip is connected for use.

Zasio et al. disclose a VLSI chip tester for defining and performing functional tests, delay tests, and DC parametric tests on VLSI chips.

Contact Information

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carol S. W. Tsai whose telephone number is (571) 272-2224. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (571) 272-2216. The fax number for TC 2800 is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2800 receptionist whose telephone number is (571) 272-1585 or (571) 272-2800.

In order to reduce pendency and avoid potential delays, Group 2800 is encouraging FAXing of responses to Office actions directly into the Group at (703) 872-9306. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the

Application/Control Number: 10/748,472

Page 7

Art Unit: 2857

examiner and art unit at the top of your cover sheet. Papers submitted via FAX into Group 2800 will be promptly forwarded to the examiner.

A handwritten signature in black ink, appearing to read "Carol S. W. Tsai", with a stylized flourish at the end.

Carol S. W. Tsai
Patent Examiner
Art Unit 2857

06/17/04